

Message Text

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53

ACTION OES-05

INFO OCT-01 IO-11 ISO-00 NRC-07 ACDA-10 CIAE-00 INR-07

L-03 NSAE-00 NSC-05 EB-07 FEAE-00 DODE-00 INRE-00

SSO-00 NSCE-00 /056 W

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O 291337Z JAN 76

FM USMISSION IAEA VIENNA

TO SECSTATE WASHDC IMMEDIATE 6980

INFO USERDA GERMANTOWN IMMEDIATE

UNCLAS IAEA VIENNA 0693

DEPT PASS IO/SCT, NRC

OES FOR JOHN MAHY

E.O. 11652: N/A

TAGS: IAEA, TECH

SUBJECT: "TIMELY DETECTION" OF DIVERSION BY IAEA SAFEGUARDS

REF: MAHY/LABOWITZ TELCON JANUARY 28

1. MOST CONCISE STATEMENT ON SUBJECT CONTAINED IN
FOLLOWING PARA FROM IG ROMETSCH'S PAPER PRESENTED AT
OCTOBER SAFEGUARDS SYMPOSIUM:

2. QUOTE TIMELY DETECTION AS USED IN INFCIRC/153
WAS ORIGINALLY BASED ON THE CONCEPT OF CRITICAL TIME,
THE APPROXIMATE TIME NEEDED TO CONVERT A PARTICULAR
FORM OF NUCLEAR MATERIAL TO FORM NEEDED TO MANUFACTURE
A NUCLEAR EXPLOSIVE DEVICE. THIS CONCEPT ASKS IN
SOME CASES FOR AN IMPOSSIBLE FREQUENCY FOR TAKING
PHYSICAL INVENTORY: EVERY 10 DAYS FOR REPROCESSING
AND MIXED-OXIDE FUEL FABRICATION FACILITIES. A
POSSIBLE APPROACH IS TO BASE CRITERIA FOR TIMELY
DETECTION ON THE LIMITS OF TECHNICAL FEASIBILITY FOR
PHYSICAL INVENTORY TAKING AND IMPOSE THEM AS RE-
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QUIREMENTS ON OPERATORS. ANOTHER ALTERNATIVE,

WHICH HAS BEEN CHOSE BY THE AGENCY, IS
TO BASE THOSE CRITERIA ON OPERATOR'S PRACTICE EXPECTED
BY THE AGENCY. THE NUMBER OF INVENTORIES TO BE
VERIFIED BY THE AGENCY MIGHT, AT THE LIMIT,
BE EQUAL TO THOSE TAKEN BY OPERATOR. END QUOTE

3. WITH REGARD TO SPECIFIC CASE OF CRITICAL
FACILITIES WHICH CAN CONTAIN LARGE QUANTITIES OF
HIGH-PURITY FISSILE MATERIAL, THIS IS MOST
DIFFICULT VERIFICATION PROBLEM FOR AGENCY (OR FOR
ANY NATIONAL OR INTERNATIONAL VERIFICATION SYSTEM).
THOSE FISSILE ELEMENTS EHICH ARE NOT IN USE COULD
BE MONITORED, SURVEYED, AND/OR MEASURED WITH
APPROPRIATE HIGH FREQUENCY. HOWEVER,
THOSE ELEMENTS IN ACTIVE ASSEMBLY AT A GIVEN TIME
ARE VIRTUALLY IMPOSSIBLE TO VERIFY. SEALS AND
SURVEILLANCE CAMERAS MAY OR MAY NOT PROVIDE DETAILED
KNOWLEDGE OF WHAT ELEMENTS ARE PRESENT. THE
DIFFICULTY IS DUE TO HIGH LEVEL OF RESEARCH ACTIVITY.
THE AGENCY IS CURRENTLY WORKING ON THIS PROBLEM.
IN ANY CASE, TRUE INVENTORY OF WHOLE FACILITY CAN
ONLY BE TAKEN AT THOSE TIMES AT WHICH ALL
ELEMENTS ARE OUT OF CRITICAL ASSEMBLY APPARATUS,
AND AVAILABLE FOR VERIFICATION. THE FREQUENCY WITH
WHICH THIS OCCURS WILL BE DEPENDENT ON MODE OF
OPERATION OF FACILITY.

4. IF DETAILED DISCUSSION OF POTENTIAL FOR NON-
DESTRUCTIVE INSTRUMENT ANALYSIS,
INCLUDING COOLING TIME REQUIREMENTS, IS DESIRED,
MENZEL (LASL, RECENT MEMBER IAEA SECRETARIAT) SHOULD
BE CONTACTED BY PHONE. LABOWITZ

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